

In the claims:

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1. An automated calibration system for tracking a colored object through a series of frames of data, comprising:

a first processing device to execute a program, wherein the program displays at least one image frame from an image input device;

an image selection device to select the colored object in the at least one image frame;

an image source device to provide a hue saturation value (HSV) data array of pixels in the colored object;

a second processing device to analyze the HSV data array, wherein the second processing device determines characteristics of the pixels in the at least one image frame that are to be associated with the object based on a probability.

2. The system of claim 1, further including an HSV thresholding device to threshold the HSV data array of the pixels in the colored object.

3. The system of claim 1, wherein the image input device is a digital camera.

4. The system of claim 1, wherein the first processing device, the image selection device, the image source device, the HSV thresholding device and the second processing device are all part of a single device.

5. The system of claim 1, wherein the second processing device calculates a mean hue and a standard deviation of the pixels representing the colored object.

6. The system of claim 5 wherein if the mean hue or the standard deviation of the hue are less than predetermined levels, the colored object is not tracked.

7. The system of claim 1, wherein the second processing device calculates a mean saturation and a standard deviation of a saturation of the pixels representing the colored object.

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8. The system of claim 7, wherein if the mean saturation or the standard deviation of the saturation are less than predetermined levels, the selected object is not tracked.
9. A method of calibrating a computer-vision system to track a colored object through a series of frames of data, comprising:

executing a program to display at least one image frame from an image input device;

providing a calibration selection device to select the colored object from the at least one image frame;

performing calibration processing to ensure that the object selected is trackable throughout the series of frames, wherein the calibration processing analyzes pixel data of the object; and

creating a table from the pixel data for the object.

10. The method of claim 9, wherein the method further includes converting a pixel data array for the at least one image frame from a red-green-blue colorspace (RGB) data array to a hue-saturation-value colorspace (HSV) data array.

11. The method of claim 9, wherein the method further includes applying the pixel data from an entire frame to the pixel-classification look-up map, wherein if the amount of the pixels associated with the object are greater a predetermined amount, the calibration method restarts.

12. The method of claim 10, wherein the method further includes determining, based upon a hue and a saturation of the pixel data in a hue-saturation-value (HSV) colorspace, which of the pixels in the image frame are to be a part of the colored object selected based on a probability.

13. The method of claim 13, wherein the method further includes thresholding the HSV data array of pixels in the colored object.
14. The method of claim 10, wherein the method further includes calculating a mean hue and a standard deviation of a hue of the pixels in the colored object.
15. The method of claim 10, wherein the method includes restarting the calibration method if the mean hue or the standard deviation of the hue are less than predetermined levels.
16. The method of claim 10, wherein the method further calculating a mean saturation and a standard deviation of a saturation of the pixels in the colored object.
17. The method of claim 16, wherein the method includes restarting the calibration method if a mean saturation or the standard deviation of the saturation are less than predetermined levels.
18. The method of claim 10, wherein the method further includes allowing the user to select the colored object.
19. The method of claim 10, wherein the table is a pixel classification look-up map.
20. The method of claim 10, wherein the method further includes calculating a mean hue and a standard deviation of a hue of the pixels in the colored object.

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